Implementation of Bar Code Technology to Improve Patient Safety

Background: The legacy hospital information systems (CHCS, ADS, CIS) of the Walter Reed Army Medical Center (WRAMC) were designed to facilitate the flow of patient information in a hospital environment of the late 1980s. Digitizing information, connecting ancillary services to primary and specialty care clinics and wards and allowing mobility throughout the medical center via a local area network was a godsend. Digitization and mobility of the information proved an invaluable success, as such clinical practices changed. However, over time, through numerous upgrades of existing and implementations of new technology, the environment of the 80s quickly turned to the current state, a mix of disparate technology, manual data input, constant data hand-off, data latency and isolated use of emerging information technology. This project was conceived out of the need to aggregate information and mobilize it to the point of care. Rather than sending the information to a fixed portal, we intend to send the information to the care provider, wherever he may be. Technology is currently available to realize the vision of a mobile environment.

Project Plan: It is our intent to implement a comprehensive wireless pilot program aimed at enterprise deployment. This project will focus on the integration of technology with business processes, knowledge, and human performance, also known as convergent integration. Project success hinges on collaboration among information technology (IT), administrative and clinical staff, substantial research on emerging point-of-care healthcare technology, technology demonstration and validation, development of a comprehensive project work plan, coordinated deployment schedules, comprehensive testing parameters, and development of performance measures. Pilot deployment will focus on four services (Family Practice, Neurosurgery, Pulmonary and Gynecology) across the continuum of care (in-patient, out-patient and critical care) with Nursing acting as a catalyst spurring action on all fronts.

Outcome Metrics: Mitigating medication administration errors, 30-minute time-savings per day per physician, timely decision support, accurate workload accountability and billing accuracy are the guiding factors to implementing point of care (POC) technology; while, real-time data availability, ensuring data integrity and security, and ensuring electromagnetic/radio frequency compliance keep the efforts in check with the Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) and Department of Defense (DoD) regulations and guidelines. Numerous disparate data mobility projects are underway within the medical center. Such projects have a limited scope and vision for an enterprise-wide healthcare information portability/mobility convergence effort. Successful validation of these objectives and pre-requisites will drive proliferation throughout other wards and clinics of the medical center.

Summary: Care provider mobility directly relates to maximizing their valuable time contact with the patient. Provider access to all information they require via a device in their pocket, is a more cost effective use of their time. Handheld devices are the enabling technology. Numerous devices exist, but few are capable of meeting our challenging requirements. Ideally, these devices will be connected via a wireless local area network (LAN) and enabled with a form of voice recognition. Successful testing measured through comprehensive performance measures is expected to ensure user acceptance, and is likely to spur user requests for solution deployment throughout the medical center.

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